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Listing of Claims

The following listing of claims will replace all prior versions, and listings, of claims in the subject application:

Claim 1 (canceled).

Claim 2 (currently amended): An X-ray CT apparatus for generating a tomographic image by reconstructing projection data acquired by scanning a predetermined slice of a subject, said X-ray CT apparatus comprising

detecting means for detecting a static cardiac time phase with a small amount of motion artifacts in a predetermined portion of the subject based on heartbeat information acquired in association with the projection data, and

image reconstructing means for generating the tomographic image by reconstructing projection data corresponding to the static cardiac time phase detected by the detecting means,

wherein the detecting means ~~detects~~ determines the static cardiac time phase of the predetermined portion based on correlation data between the heartbeat information and the static cardiac time phase of each of a plurality of different portions of the subject, that are previously determined ~~to each subject~~.

Claim 3 (currently amended): An X-ray CT apparatus according to claim 2, wherein ~~the correlation data is prepared to each of different portions of the subject, and~~ the detecting means comprises input means for setting the predetermined ~~portions~~ portion.

Claim 4 (previously presented): An X-ray CT apparatus according to claim 2, wherein the correlation data includes at least a correlation between a heartbeat rate and a static cardiac time phase.

Claim 5 (previously presented): An X-ray CT apparatus according to claim 2, further comprising

memory means for storing the projection data acquired over a plurality of heart beat cycles and

a projection data synthesizing means for reading the projection data corresponding to the static cardiac time phase detected by the detecting means and synthesizing the projection data,

wherein the image reconstructing means reconstructs the projection data synthesized by the projection data synthesizing means.

Claim 6 (canceled).

Claim 7 (previously presented): An X-ray CT apparatus according to claim 8, wherein an image size of the sample tomographic image is set smaller than that of the tomographic image.

Claim 8 (currently amended): An X-ray CT apparatus for generating a tomographic image by reconstructing projection data acquired by scanning a predetermined slice of a subject, said X-ray CT apparatus comprising

detecting means for detecting a static cardiac time phase with a small amount of motion artifacts in a predetermined portion of the subject based on heartbeat information acquired in

association with the projection data, and

image reconstructing means for generating the tomographic image by reconstructing projection data corresponding to the static cardiac time phase detected by the detecting means,

wherein the detecting means comprises

sample tomographic image rearranging means for generating a plurality of sample tomographic images ~~having a~~ of respective different cardiac time [[phase]] phases based on the projection data and the heartbeat information and

selecting means for selecting a sample tomographic image with a small amount of motion artifacts from the plurality of sample tomographic images,

wherein the image reconstructing means generates the tomographic image by reconstructing projection data corresponding to the cardiac time phase of the sample tomographic image selected by the selecting means, and

wherein the selecting means calculates an integrated value of a CT value of each of the plurality of sample tomographic images in a predetermined region and selects a sample tomographic image with a smallest fluctuation of the integrated value of the CT value.

Claims 9 and 10 (canceled).

Claim 11 (previously presented): An X-ray CT apparatus according to claim 8, further comprising

memory means for storing the projection data acquired over a plurality of heart beat cycles and

projection data synthesizing means for reading the projection data corresponding to the

cardiac time phase of the sample tomographic image selected by the selecting means and synthesizing the projection data,

wherein the image reconstructing means reconstructs the projection data synthesized by the projection data synthesizing means.

Claim 12 (previously presented): An X-ray CT apparatus according to claim 8, wherein the sample tomographic image generating means generates the plurality of sample tomographic images in a predetermined cardiac time phase range determined based on the correlation data between the heartbeat information and the static cardiac time phase that are determined previously.

Claim 13 (previously presented): An X-ray CT apparatus according to claim 12, wherein the correlation data is prepared to each of different portions of the subject, and the detecting means comprises input means for setting the predetermined portions.

Claim 14 (previously presented): An X-ray CT apparatus according to claim 12, wherein the correlation data includes at least a correlation between a heart rate and a static cardiac time phase.

Claim 15 (currently amended): An X-ray CT imaging method of generating a tomographic image by reconstructing projection data acquired by scanning a predetermined slice of a subject, said X-ray CT imaging method comprising

(a) detecting a static cardiac time phase with a small amount of motion artifacts in a

predetermined portion of the subject based on heartbeat information acquired in association with the projection data, and

(b) generating the tomographic image by reconstructing projection data corresponding to the detected static cardiac time phase,

wherein said detecting the static cardiac time phase in (a) includes determining the static cardiac time phase of the predetermined portion based on correlation data between the heartbeat information and the static cardiac time phase of each of a plurality of different portions of the subject, that are previously determined.

Claim 16 (currently amended): An X-ray CT imaging method according to claim 15, further comprising acquiring the correlation data between the heartbeat information and the cardiac time phase from each subject, wherein the static cardiac time phase is detected based on the correlation data.

Claim 17 (previously presented): An X-ray CT imaging method according to claim 15, further comprising

generating a plurality of sample tomographic images having respective different cardiac time phases based on the projection data and the heartbeat information,

selecting a sample tomographic image with a small amount of motion artifacts from the plurality of sample tomographic images, and

using a cardiac time phase corresponding to the selected sample tomographic image as a static cardiac time phase.

Claim 18 (previously presented): An X-ray CT imaging method according to claim 17, wherein an image size of the sample tomographic image is set smaller than that of the tomographic image.

Claim 19 (currently amended): An X-ray CT imaging method according to claim 15, further comprising

acquiring the correlation data between the heartbeat information and the static cardiac time phase from each subject, and

generating the plurality of sample images in a predetermined cardiac time phase range determined based on the correlation data.

20. (new) The X-ray CT imaging method of claim 15, further comprising:

storing said correlation data in a memory, wherein the static cardiac time phase is determined based on the correlation data retrieved from said memory.

21. (new) An X-ray CT apparatus according to claim 2, further comprising:

memory means for storing said correlation data,

wherein the detecting means determines the static cardiac time phase of the predetermined portion based on the correlation data stored in said memory means.

22. (new) An X-ray CT apparatus according to claim 2, wherein the correlation data stored in said memory means is obtained for each subject.

23. (new) An X-ray CT apparatus according to claim 2, wherein the static cardiac time phase detected by the detecting means represents a timing within a R wave cycle.